DOCUMENT RESUME

ED 310 573 EC 220 777

AUTHOR McCarthy, Catherine; And Others
TITLE The Effects of Joint Activity Intervention on Children's Pragmatic Language Skills.
PUB DATE 88
NOTE 12p.; In: Baine, David, Ed.; And Others. Alternative Futures for the Education of Students with Severe Disabilities (Edmonton, Canada, May 6-8, 1987). For proceedings, see EC 220 763; for other selected papers, see ED 220 764-782.
PUB TYPE Reports - Evaluative/Feasibility (142) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Developmental Disabilities; *Interpersonal Competence; Intervention; Language Acquisition; *Language Skills; *Parent Child Relationship; *Play; *Social Development; Young Children
IDENTIFIERS *Turntaking

ABSTRACT

The paper reports on an exploratory study of the turntaking and pragmatic language skills of handicapped children during parent-child reciprocal play, compared to that of non-handicapped children. The four handicapped children were 25-36 months of age. The paper also describes a pilot intervention involving carefully structured joint activity play routines between parent and child designed to increase generalized pragmatic language skills. The study found a discrepancy between turntaking ability and communicative ability for the handicapped dyads in that their performance on the communication tasks tended to be poor whereas their performance on the turntaking tasks tended to be good. (Author/DB)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED310573

The Effects of Joint Activity Intervention on Children's Pragmatic Language Skills

Catherine McCarthy

Hazeldean Early Education Program
Edmonton

Gerard M. Kysela
Gary Holdgrafer

University of Alberta

Abstract

This paper reports on an exploratory study of the turntaking and pragmatic language skills of handicapped children during parent-child reciprocal play compared to that of non-handicapped children. The handicapped children were 25-36 months of age. The paper also describes a pilot intervention involving carefully structured joint activity play routines designed to increase generalized pragmatic language skills.

Turntaking Intervention

The turntaking, play routines of parents and their children appear to provide the basis for the development of language as a socio-communicative or pragmatic behavior (Bruner, 1978). The reciprocal or give-and-take alternations involved in the turntaking changes provide a child with experience in affecting and being affected by the communicative behavior of another person (Bruner, 1978; Coggins & Carpenter, 1981; Snyder-McLean, Solomonson, McLean, & Sack, 1984). Children learn to regulate these exchanges through gestures and then verbal language in the form of comments and requests made to the interactive partner (Bruner, 1975; Demetras, Post & Snow, 1986). Accordingly, any breakdown in the development of turntaking ability might also adversely affect a child's ability to develop pragmatic language skills (Girolametto, 1985; Snyder, 1978)

Comparisons have been made between nonhandicapped and handicapped children on measures of turntaking skills in play interactions (Jones, 1980; Kogan, Wimberger, & Bobbit, 1969), as well as on pragmatic language skills (Snyder, 1978). Handicapped children appear to have difficulty assuming a role in discourse situations; as a result, there are lower levels of turntaking. Moreover, caretakers may become directive and controlling of their children's behavior, particularly when the degree of handicap is great (Breiner & Forehand, 1982). Consequently,

EC220777

BEST COPY AVAILABLE

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

David Baine

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

the child is prevented from taking an active role in turntaking interactions (MacDonald & Gillette, 1982). Handicapped children may also exhibit a pragmatic language deficit (Snyder, 1978). They may acquire words but not the ability to use those words consistently to refer to objects in specific situations that involve making requests of, or commenting to, a listener.

By inference, any child who demonstrates a turntaking deficit might also be expected to demonstrate a pragmatic language deficit and vice versa. No study has attempted to measure both the turntaking and pragmatic language skills of handicapped children and to compare their performance with that of nonhandicapped children, despite the fact that the two skills have been linked in the developmental literature. The present exploratory study was a comparison of four handicapped children with 14 nonhandicapped children on measures of turntaking with their mothers and on pragmatic language skills. The four handicapped children were subsequently involved in the 14-week language intervention portion of the study.

Method

Subjects

The four handicapped children (1 boy, 3 girls) ranged in age from 25 to 36 months of age. These children had an expressive vocabulary range of 9-33 words and their speech was limited to single word utterances. Their scores on the Bayley Mental Development Subscale (Bayley, 1969) ranged from 18-21.5 months (7-17-month delay). Their scores on the Bayley Motor Development Subscales ranged from 9.5-25.5 months (3-18 month delay). Their receptive and expressive scores on the Sequenced Inventory of Communication Development (Hedrick, Prather, & Tobin, 1984) ranged from 16-20 months respectively (5-20 month delay on both subtests). One child exhibited Down's Syndrome and two others had motor disabilities along with cognitive delays.

The 14 nonhandicapped children ranged in age from 15-19 months. Thirteen of the children had an expressive vocabulary range of 5-37 words; their speech was limited to single word utterances. One child had an expressive vocabulary of 60 words with a minimal number of two word utterances. Their scores on the Bayley Mental Development Subscale ranged from 14.5-25.6 (4 months below to 9 months above age level). Their receptive scores on the Sequenced Inventory of Communication Development ranged from 16-28 months (2 months below to 8 months above age level) and their expressive scores ranged from 16-20 months (2 months below to 4 months above age level).

Identical baseline assessments were performed on both the handicapped child-parent dyads (HC) and the nonhandicapped child-parent dyads (NHC). These assessments consisted of:

1. measures of turntaking ability, and
2. measures of pragmatic communication ability.

Turntaking Tasks

Mothers and their young children typically engage in simple, reciprocal play routines which provide the context for gestural and verbal communication. The turntaking tasks used in the current study were based on those developed by MacDonald and Gillette (1982).

The turntaking task consisted of six 2-minute intervals during which the mother interacted with her child using a different toy object in each of the intervals. The toys were selected because they appeared to provide for simple reciprocal play actions. The particular variables of interest in the turntaking interaction were turn mode and length and interactional strategies.

Turn mode related to the communicative mode employed by the dyadic members. That is, the communicative behavior of both adults and children were categorized as action, vocalization, word, or phrase. MacDonald and Gillette (1982) argued that an adult should display actions and communications only slightly more advanced than those of the child so that turntaking exchanges will optimally facilitate progressive changes in the child's behavior.

Interacting with a child at his/her current level of functioning is *mode-matching* and modeling and expansion are strategies for *progressive matching*. Non-mode matching occurs when the adult displays behavior two modes or more above the child's behavior as in the case of an adult talking in words or phrases to a child who is behaving primarily at an action level. Mode-matching by the adult and use of progressive matching strategies allows the child to more easily assimilate new behavior into his/her existing repertoire (MacDonald & Gillette, 1982).

Turn length was also felt to be an important variable in the turntaking exchanges. MacDonald and Gillette (1982) argued that the longer the turntaking exchanges were the more opportunities there were for displaying new behaviors to be learned by the child. Ideal turntaking exchanges are characterized by adult behavior that progressively matches the child's behavior and that also serves to facilitate continued participation in the joint activity.

Eight categories of adult *interactional strategies* were developed based on the concepts of mode-matching and progressive matching. In addition, five categories of child behavior were developed based on the assumption that children possess a repertoire of interactive behaviors

that enable them to participate actively in the learning process. These interactional strategies were observed during the turntaking tasks engaged in by each dyad in the study.

Communication Tasks

According to Bruner (1975) and Bates, Camaioni, and Volterra (1975), children utilize gestural and linguistic communication either to get an adult's attention or to get an adult to do something for the child. These two intentions have been referred to respectively as comments and requests by Bruner and as declaratives and imperatives by Bates et al. In the present study, declarative and imperative communication tasks were developed based on those used by Snyder (1978). The declarative task is based on the observation by Greenfield and Smith (1976) that children are most likely to draw an adult's attention to new or changing situational elements as opposed to old or unchanging elements.

Imperative tasks consisted of situations in which toys or objects were held by the experimenter within a child's visual field but out of reach in order to facilitate a request for the toy or object. Children's responses on the two tasks were scored using a developmentally-ordered rating scale described by Sugarman (1973, cited in Snyder, 1978) that covers a progressive sequence of gestural to linguistic communication behaviors.

In the present study, objects were obtained for five words that appeared in each child's language sample. Each object was presented first in a declarative task followed immediately by the imperative task. The variables of primary interest were the percentage of gestural versus linguistic responses on the two communication tasks. The rating system allowed for identification of various gestural or nonlinguistic behaviors. The research has suggested (Snyder, 1978) that handicapped children with comparable vocabularies to those of normal children may exhibit a pragmatic deficit in the use of that language (Snyder, 1978). They may use gestures, rather than words they have already acquired, to get the adult's attention or get the adult to do something in specific communication situations such as the communication tasks used in this study.

Following baseline measures of turntaking behavior and communicative behavior of both the HC and NHC dyads, the HC dyads were involved in a period of joint activity intervention. Joint activity routines have a number of characteristics that may facilitate the development of pragmatic language skills (Ratner & Bruner, 1978; Snyder-McLean, et al., 1984). They provide a simple but highly familiar play-oriented framework for the child, into which the adult can introduce functional language. As mentioned earlier, the turntaking nature of the routines provides a child with experience in affecting and being affected by the communicative behavior of another person as the basis for the develop-

ment of pragmatic language skills. Ratner and Bruner (1978) have observed that language learned within the confines of these structured games generalizes to a variety of other practical speaking situations.

The intervention portion of this study was an attempt to determine experimentally whether joint action routines structured carefully for turntaking interaction do provide assistance to children in developing and generalizing pragmatic language skills as suggested by Ratner and Bruner (1978). Specifically, words from the four handicapped children's vocabularies were modeled by their mothers in the context of simple but highly familiar play routines established for each mother-child dyad. Each child's use of these words in the play routines and their subsequent generalization to the communication tasks and home environment, as determined by a post-treatment language sample, were evaluated. The research question asked was whether children would increase their communicative or pragmatic use of words already in their lexicons if these words were highlighted in the context of turntaking routines. In effect, does joint activity intervention result in a reduction of a demonstrated pragmatic language deficit?

The study consisted of two phases. Phase I (Turntaking with Actions) involved reciprocal turntaking based on simple actions with toys. One intent of this phase of intervention was to establish the turntaking, joint activity framework into which the target words could be inserted and to extend the length of the social interaction in order to increase the frequency of opportunities for the child to use the words within the social interaction. The terminal criterion for Phase I of intervention involved sustained turntaking at the action level.

During Phase II (Turntaking with Communications), mothers were instructed to model target words within the previously developed action turns of both mother and child. Terminal criteria for Phase II involved spontaneous use of several specific target words during play interactions.

Results

Baseline Comparison Between HC and NHC Groups

Analysis of results of turntaking tasks revealed that there was little difference between the two groups of children and mothers in turntaking or interactional performance. In particular, the mothers of the handicapped children were no more likely to mismatch the turntaking mode of their children than the mothers of nonhandicapped children and they were no less effective in sustaining their children in turntaking sequences. They were similar to the mothers of nonhandicapped children in use of various interactional strategies. Analysis of communication task results revealed that the ratings for the handicapped children were

within the distribution of ratings of the nonhandicapped children but toward the lower end.

The handicapped children received ratings of approximately 50% fewer linguistic responses (versus gestural responses) when compared to the nonhandicapped children on the declarative task. The percentage of linguistic responses to the imperative task was similar for both groups of children.

Intervention Results

Turntaking mode. The frequency of occurrence of each mode of communication used by the mothers involved in the study was generally consistent with the phases of the study. That is, during Phase I of intervention, each mother showed an increase in actions. Their use of words either remained stable or decreased slightly. There was also a sharp decrease in their use of phrases. Following Phase II, mothers' use of actions typically remained high relative to baseline performance. Their use of words increased substantially over previous performance. Phrase use also increased somewhat. Use of vocalizations remained relatively stable across repeated administrations of the turntaking tasks.

Three of the four children had similar results to those of their mothers, with increased action turns following Phase I and increased word use following Phase II. However, their degree of change is not as significant as that of the mothers in the study. The fourth child exhibited the reverse pattern of performance for actions but did increase word usage following Phase II of intervention. Vocalizations were highly variable across children and phrase use was negligible.

Turntaking Length. Length of turns and number of turn sequences were considered to be measures of competency in turn use for the mother-child dyads. In general, there was an increase in turn length in Phase I and a decrease in Phase II, while the opposite trend was evident for number of turn sequences per 2-minute play session: a decrease was shown in Phase I with an increase in Phase II. Overall dyadic competency, therefore, remained relatively constant or showed an increase over time, with turn length increases predominating during Phase I of training and increases in number of turn sequences predominating during Phase II.

Interactional Strategies. The interactional strategies mothers were specifically instructed to use during joint activity routines were imitation of actions during Phase I and imitation of communication, vertical expansion and modeling during Phase I; and imitation of communication, vertical expansion and modeling during Phase II. Mothers increased their use of imitation of actions following Phase I. Two parents returned to baseline levels and two continued to increase in the use of that strategy following Phase II. Mothers' use of imitation of com-

munication remained stable until after Phase II when all mothers showed an increase. Mothers' use of vertical expansion either remained stable or increased slightly following Phase I. All mothers exhibited a noticeable increase in the use of vertical expansion following Phase II. Use of vertical modeling was highly variable across mothers.

It was felt that specific child interactional strategies would be facilitated by the strategies that the mothers were encouraged to use. All children increased their imitations of actions although the individual patterns of performance were variable over the course of the intervention. Similarly, all children increased imitations of communications, two gradually over the two phases and two markedly, following Phase II. All children increased their use of vertical initiations, typically after Phase II.

Communication Tasks

The communication tasks in conjunction with pre-post language samples were utilized to assess the effects of the intervention in pragmatic language skills. Subject responses on communication tasks were scored as linguistic if the child used the specific word targeted in intervention or another word that was nonetheless appropriate to the task (e.g., that, gimme). The later category was included to determine if the effects of the intervention were specific to the words targeted or whether there was a more general tendency of the subjects to use words to call attention to, or request an object from, an adult over the course of intervention.

Results indicated a change in both Imperative communicative tasks and the Declarative communication tasks, with the greatest magnitude of change occurring in the latter. Subjects increased their use of either specific or nonspecific words used in the pragmatic language tasks. The changes that occurred were largely due to a child's responses on the two words as targeted in intervention.

Frequency of usage of the two target words in the pre-post language sample increased for all four children, with one child showing an enormous change.

Discussion

In evaluating the relative performance of the HC and NHC dyads, it becomes apparent that there was a discrepancy between turntaking ability and communicative ability. The performance of the handicapped children on the communication tasks was toward the lower end of the distribution of the normal children with a major difference in performance evident on the Declarative task. This was in contrast to the results of the turntaking tasks where the handicapped children were typically toward the higher end of the distribution of scores for the nor-

mal children. Consequently, there was a discrepancy in performance between turntaking tasks and communication tasks for the handicapped children that did not exist for the nonhandicapped children. This finding indicates that the handicapped children had at least a mild pragmatic deficit, particularly in view of the ceiling effect on the performance of the normal children on the communication tasks.

The turntaking and communication results were somewhat surprising. Earlier research indicated that performance of the handicapped children and their mothers on the turntaking tasks might be depressed when compared to nonhandicapped children and their mothers. Their very favorable turntaking performance in this study may be due, in part, to their previous experience participating together in early intervention learning activities. Despite favorable social interaction with their mothers, the handicapped children displayed a pragmatic language deficit. Similar to the results of Snyder (1978), the handicapped children in this study performed at a lower level (4) than did the nonhandicapped children (5-6) on the Means-Ends Scale of the Uzgiris and Hunt Ordinal Scales of Psychological Development (Uzgiris & Hunt, 1975) administered at the beginning of the study. Language is a tool in social interaction and this finding seems consistent with the presence of a pragmatic deficit (Snyder, 1978). Finally, Schwartz, Chapman, Terrell, Prelock and Rowan (1985) pointed out that failure of children to acquire normal language assumes that the facilitating aspects of normal interaction occur with sufficient frequency to be of benefit of the child.

The results of the turntaking tasks suggested that the joint activity intervention had some generalized effects on the interaction between the handicapped children and their mothers. The frequencies of action, word, and phrase use by the mothers are consistent with the goals of each phase of intervention. As expected, there were increases in actions following Phase I and increases in word and phrase use following Phase II. Similar generalized effects for mode of interaction were not as clear or consistent for the children, but their performance was typically in the appropriate direction.

The decrease in mode-matched turns demonstrated by all four dyads following Phase II of treatment was not anticipated; however, in retrospect, it appeared to have a logical origin. Mode-matched turns required parents to be communicating at a level not more than one mode higher than the mode used by their children. Therefore, in order to fulfill the criteria for mode-matched turns during Phase II, a parent and her child had to communicate about the same topic for a number of uninterrupted turns utilizing at least the single word level. It seems unlikely that the children would be able to maintain communication at a word level for as long as they were able to at the action level. Thus,

there was a decrease in mode-matched turn length following Phase II of the study.

In general, increases in turn length were matched with decreases in number of turn sequences. It appears that at this level of development, turn length and number of turn sequences may be corollary concepts.

The use of interactional strategies by the mothers, as described earlier, were generally consistent with the instructions they received during each phase of intervention. The children's use of interactional strategies was also generally in line with expectations, based on the goals of the intervention phases.

The results of the communication tasks suggested that joint activity intervention can result in increases in pragmatic language skills of handicapped children. Two of the four children showed steady improvement in linguistic responses on the communication tasks. All four children exhibited increases in the frequency of use of the target words on the pre-post language samples.

This study was a preliminary attempt to explore the relationship between social interaction and pragmatic language skills in children, specifically in the form of highlighting word use within turntaking joint activity routines and elicitation of words as declaratives and imperatives on communication tasks. The results are limited by aspects of the study. In particular, there is not a clear demonstration of experimental control. The results cannot be attributed to the intervention program with confidence. A subject multiple baseline was utilized initially with both pairs of children. Due to illness and absence, the lag time between children disappeared and they were essentially run concurrently. The children who were available for the study were not homogeneous which could account for some of the variability in performance. There appeared to be some loss of interest by the children in participating in the communication tasks after several repeated administrations which may have depressed their performance. Some variation in the repeated measures for pragmatic language skills that would maintain task motivation appears to be in order. Finally, it should be pointed out that joint activity intervention is a package of variables and no conclusive statements can be made about any single variable. The conclusions to be drawn from this study should, therefore, be considered only tentative.

References

Bates, E., Camaioni, L., & Volterra, V. (1975). The acquisition of performatives prior to speech. *Merrill-Palmer Quarterly, 21*, 205-226.

Bayley, N. (1969). *Manual for the Bayley Scales of Infant Development*. New York: Psychological Corporation.

Breiner, J., & Forehand, P. (1982). Mother-child interactions: A comparison of a clinic-referred developmentally delayed group and two non-delayed groups. *Applied Research in Mental Retardation, 3*, 175-183.

Bruner, J.S. (1975). The ontogenesis of speech acts. *Journal of Child Language, 2*, 1-20.

Bruner, J.S. (1978). The role of dialogue in language acquisition. In A. Sinclair, R.J. Jarvella, & W.J. Levelt (Eds.), *The child's conception of language*. New York: Springer-Verlag.

Coggins, T., & Carpenter, R. (1981). The communicative intention inventory: A system for observing and coding children's early intentional communication. *Applied Psycholinguistics, 2*, 235-252.

Demetras, M.J., Post, K.N., & Snow, C.E. (1986). Feedback to first language learners: The role of repetitions and clarification questions. *Journal of Child Language, 13*, 275-292.

Girolametto, L. (1985, May). *Model for intervention: Developing dialogue between mothers and delayed children*. Paper presented at the Annual Convention of the Canadian Speech and Hearing Association, Toronto.

Greenfield, P., & Smith, P. (1976). *The structure of communication in early language development*. New York: Academic Press.

Hedrick, D., Prather, E., & Tobin A. (1984). *Sequenced inventory of communication development*. Seattle: University of Washington Press.

Jones, O. (1980). Prelinguistic communication skills in Down's syndrome and normal infants. In T.M. Fields, S. Goldberg, D. Stern, & A.M. Sostek (Eds.), *High risk infants and children: Adult and peer interactions*. New York: Academic Press.

Kogan, K., Wimberger, H., & Bobbit, R. (1969). Analysis of mother-child interaction of young mental retardates. *Child Development, 40*, 799-812.

MacDonald, J., & Gillette, Y. (1982). *A conversational approach to language delay: Problems and solutions*. Columbus: Ohio State University, The Nisonger Center.

Ratner, N., & Bruner, J. (1978). Games, social exchange and the acquisition of language. *Journal of Child Language, 5*, 391-402.

Schwartz, R.G., Chapman, K., Terrell, B.Y., Prelock, P.A., & Rowan, L.E. (1985). Facilitating word combination in language-impaired children through discourse structure. *Journal of Speech and Hearing Disorders, 50*, 31-39.

Snyder, L.S. (1978). Communicative and cognitive abilities in the sensorimotor period. *Merrill-Palmer Quarterly, 24*, 161-180.

Snyder, L., & McLean J. (1976). Deficient acquisition strategies: A proposed conceptual framework for analyzing severe language deficiency. *American Journal of Mental Deficiency, 81*, 338-339.

Snyder-McLean, L., Solomonson, B., McLean, J., & Sack, S. (1984). Structuring joint action routines: A strategy for facilitating communication and language development in the classroom. In J. McLean & L. Snyder-McLean (Eds.), *Strategies of facilitating language development in clinics, schools, and homes. Seminars in speech and language* (pp. 213-226). New York: Thieme-Stratton.

Sugarman, S. (1973). *A description of communicative development in the pre-language child*. Unpublished honors thesis, Hampshire College.

Uzgiris, I.C., & Hunt, J.McV. (1975). *Assessment in infancy: Ordinal scales of psychological development*. Urbana: University of Illinois Press.